

### **AMENDMENTS TO THE CLAIMS**

What is claimed is:

1-10. (Cancelled)

11. (Currently amended) A method for characterizing cells in an environment, the method comprising:

- a) placing a collecting device in the environment to collect microorganisms, the collecting device comprising:
  - i) an array of capillary microcosms for trapping cells, wherein fluid flow can be controlled through the capillary microcosms individually; and
  - ii) a housing surrounding the array and having an opening to controllably permit cells from the environment to access the array;
- b) retrieving the collecting device from the environment;
- c) sampling at least one of the capillary microcosms to obtain at least one sample;
- d) analyzing the at least one sample to characterize the cells in the environment.

12. (Original) The method of claim 11, wherein the step of sampling comprises using an automated sample handling device.

13. (Original) The method of claim 12, wherein the step of sampling at least one of the microcosms comprises:

- a) obtaining the at least one sample using an automated sample handling device; and
- b) concentrating the at least one sample for analysis.

14. (Original) The method of claim 13, wherein the step of analyzing comprises analysis by mass spectrometry.

15. (Original) The method of claim 14, wherein the step of analyzing comprises using MALDI TOF mass spectrometry to characterize the cells.

16. (Original) The method of claim 15, wherein the cells are characterized as whole cells.

17. (Original) The method of claim 15, wherein a cell lysate is analyzed using MALDI TOF.

18. (Original) The method of claim 14, wherein the step of analyzing further comprises comparing at least one molecular weight determined by mass spectrometry to a computerized library of molecular weights.

19. (Original) The method of claim 15, wherein the cells comprise a microorganism useful for bioremediation.

20. (Original) The method of claim 15, wherein the cell comprises *Sphingomonas wittichii* Strain RW1.

21. (Original) The method of claim 14, wherein the step of analyzing by mass spectrometry comprises analyzing an isotopically labeled molecule.

22. (Original) The method of claim 14, wherein the step of analyzing comprises determining a turnover rate of a compound of interest.

23-49. (Cancelled)

50. (Previously presented) The method of claim 11, wherein each capillary microcosm comprises a fluid inlet, a fluid outlet, and a capillary chamber.